

138 Caroline Street
Fredericksburg, VA 22401
November 8, 2010

Water Docket
Environmental Protection Agency
Mailcode: 2822T
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

NOV 15 2010

Re: Docket Number EPA-R03-OW-2010-0736

Dear Sir/Madam:

I have reviewed carefully the draft Chesapeake Bay Total Maximum Daily Load (TMDL), published by the Agency on September 24, 2010, and I support the Agency's action to establish the series of allocations known collectively as the Chesapeake Bay TMDL.

Establishment of the Chesapeake Bay TMDL is the culmination of years of collective analytical work by EPA in cooperation with the Chesapeake Bay tidal and non-tidal water jurisdictions. It follows decades of largely failed efforts by the Chesapeake Bay Program to restore the water quality in the Bay and its tidal tributaries. The TMDL is based upon Clean Water Act statutory and regulatory requirements, as well as interstate agreements and lawsuit settlements.

The TMDL is essential to assure that a more accountable structure is created to drive essential nutrient and sediment reductions. Establishing TMDLs through the Act will be more authoritative than the 2003 Chesapeake Bay allocations, and will set the stage for addressing a common concern – that most localities (rural, urban and suburban) do not yet understand what their responsibilities are for nutrient and sediment control. Despite the long-standing tributary strategies and the draft Watershed Implementation Plans, this is still being said. Finger-pointing persists among areas and sectors despite years of public communication and stakeholder involvement in the Chesapeake Bay Program processes for water quality criteria development and standards revision, 2003 allocations and tributary strategies.

Once the TMDL loads have been allocated officially to states and tributary rivers, the states finally will be able to subdivide the loads to the responsible local jurisdictions and place accountability for local actions where it belongs. This will facilitate assessment of local economic issues, help identify the most efficient approaches, and finally mobilize all those who must act to restore the Chesapeake Bay estuarine waters and their natural resource abundance.

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Some stakeholder organizations claim to be surprised or ill-informed about the basis for the TMDL. If that is the case, it is not the fault of EPA or the Chesapeake Bay Program. The basic information is well known, and the proposed nutrient allocations are quite similar to those which were issued by the Bay Program's Principals' Staff Committee in 2003. EPA and the states have made extraordinary efforts, since 2000, to seek public participation and action through all the processes which have finally led to the draft TMDL. Public documents have described the analytical processes and policy development in detail. The upgrading and use of the Bay Program models have been transparent processes.

To supplement the information which EPA has provided in its draft TMDL report about predecessor actions, I have enclosed a statement based on my experience as EPA Region III Water Protection Division Director and, subsequently, Director of the Chesapeake Bay Program Office from 2000-2007. In particular, I have highlighted the efforts made by EPA and its Chesapeake Bay partner states to consider not only the best estuarine and watershed science, but also technological and economic achievability and stakeholder views in all their decisions about water quality criteria, standards, procedures for determining attainment, allocations policy and tributary strategies.

Specifically regarding section 6 of the TMDL report, the calculation and modeling decisions which EPA made in developing the draft TMDL allocations are well-founded and based upon all the available information. These decisions also reflect full consultation with the watershed states and involvement of stakeholder representatives (Water Quality Goal Implementation Team). EPA's rationale for using the "implicit" Margin of Safety for the nutrient allocations is sound. The allocation rules and methodology in section 6.3 are reasonable and responsible. These rules also reflect the years of experience, since development of the 2003 allocations, which EPA and the states have had together in formulating nutrient and sediment allocations.

I noted EPA's statement (page 6-34) that all of the watershed states except New York and West Virginia agreed with the methods used to allocate the nutrient loads. It is fair to use policy flexibility to lighten marginally the control burden of these two headwater states, which are located farthest from the benefits of the estuary cleanup, understanding that this means adding slightly to the control responsibility of the other jurisdictions.

EPA's draft TMDL report outlines continuing work by EPA and the states to refine the criteria, use designations and methodologies for judging attainment. Specifically, EPA states its intention to base the TMDL allocations it will be adopting on revisions to the tidal water quality standards that have been proposed but not yet finalized in all jurisdictions. Knowing the good science and evaluation which underlies these revisions, I support this position and urge EPA and the states to do everything they can to assure that the proper standards are in place in time to support allocations based on them.

Finally, I would like to comment on EPA's backstop policy. The legal rationale for proposing backstop wasteload allocations (WLA) and load allocations (LA) is well-stated by EPA.

Certainly, there has to be “reasonable assurance” that the load allocations will be met. Generally, the most cost-efficient nutrient and sediment controls (based on dollar per pound or ton of pollutant removed) are best management practices (BMPs) in agriculture and land use which are also - understandably - the most difficult to regulate under the Clean Water Act. Sufficient implementation of such cost-effective practices is difficult to achieve voluntarily because farmers and other land owners may lack the financial resources to implement them and/or have no market to recoup their costs.

Many of the agricultural nutrient problems are associated with one thing – manure production from animal production and associated overuse on crop land. Surely population growth in the Chesapeake Bay watershed will only increase the demand for concentrated animal production. Digesters are apparently a technologically good method for turning a problem into a product, albeit with a weak market. Therefore, the economics need to be addressed.

Rather than provide “reasonable assurance” through extended regulatory requirements which are extremely costly compared with agriculture and other land use-related BMPs (such as riparian forest buffers and other green infrastructure) or that are not affordable by individual agricultural producers (like digesters), EPA and its partners should become even more innovative in assuring that the agricultural and other land owners have the correct incentives and assistance to achieve the necessary controls. Generally speaking, preserving agricultural land use will be good for the Bay, and its citizens, and preserving/encouraging forest land is the best land use for the Bay.

EPA and the states could look at their historical experience with wastewater treatment, where a natural market for pollution control was also lacking. Such experience in the 70s and 80s offers ideas about how to design (in cooperation with the U.S. Department of Agriculture, state agricultural agencies and agriculture industry stakeholders) a comprehensive and concerted program of economic incentives, sometimes regulatory incentives, accountability (perhaps through third-party verification), technical assistance and research/development of more cost-effective technologies. What will it take to have “reasonable assurance” that cost-effective agricultural and land use BMPs are being implemented and working? In the context of TMDL implementation and the President’s Executive Order, take the next step and put in place a systematic, coherent agricultural strategy that utilizes creatively the tension between regulatory requirements, voluntary actions and assistance. One that is accountable and works.

In summary: now is the time to institute the Chesapeake Bay TMDL, and to use it to derive county-level allocations that will inform and mobilize everyone who is responsible for controlling nutrient and sediment loads. Base the TMDL on the newly-revised water quality standards. Continue to focus on ways to favor implementation of the most cost-effective nutrient and sediment controls, including preventing loss of riparian forest and other natural areas which absorb and use nutrients and sediment.

Thank you for the opportunity to comment.

Sincerely yours,

Rebecca W. Hanmer

Rebecca W. Hanmer

Enclosure

November 7, 2010

My name is Rebecca Hanmer, and I directed the Water Protection Division in Region III, U.S. Environmental Protection Agency (EPA) and, subsequently, the EPA Chesapeake Bay Program Office from December 2000 until March 2007, when I retired from the federal government. Soon after coming to Region III, I became co-chair of the Chesapeake Bay Program's Water Quality Steering Committee. I was asked by the EPA Administrator to guide the Bay Program Office through an intense period of melding voluntary and regulatory practices because of my Clean Water Act experience.*

Since retiring, I have stayed abreast of Bay Program actions, especially development of the TMDL and state plans, and I reviewed and commented on Bay Program strategies to implement President Obama's 2009 Executive Order. I participated in two EPA public meetings on the TMDL process as a board member of the Friends of the Rappahannock, and since September 2009 I have been chair of the Bay Program's Forestry Workgroup. I am also a Virginia delegate to the Bay Program's Citizens Advisory Committee.

As Region III Water Protection Division Director and especially as head of the Chesapeake Bay Program Office, I led EPA's basic scientific and management processes that laid the foundation for EPA's development of the suite of TMDLs (Total Maximum Daily Loads) called the 'Chesapeake Bay TMDL', proposed in September 2010. These foundational processes included completing the recruitment of the Chesapeake Bay headwater states to participate in all of the Bay Program's water quality-related initiatives (2002); development and publication of Chesapeake Bay-specific water quality criteria for protecting aquatic life in the Bay and its tidal tributaries (2003), accompanied by EPA guidance for the states to use in designating water use zones for the same purpose, and for determining attainability of the uses and criteria, with state-of-the-art procedures for analyzing monitoring results and determining attainment; and production of "TMDL-like" load allocations for nitrogen, phosphorus and sediment, divided by major contributing river basin so that all seven basin states (six states and the District of Columbia) could prepare and implement tributary strategies for reducing the full range of polluting nutrient and sediment sources (2003).

These efforts supported revision of tidal water quality standards in Maryland, Virginia, Delaware and the District of Columbia (2004-5), approved by EPA. A basinwide, consistent federal-state network for nutrient water quality monitoring was established (2004), and an interstate strategy for Clean Water Act nutrient permitting of wastewater treatment discharges basinwide was developed by EPA and the partner states (2004).

Thus, development of the Chesapeake Bay TMDL has been based upon a long series of successive, supportive steps linking actions by the cooperative federal-state Chesapeake Bay Program and the EPA and state water quality regulatory programs. EPA's Clean Air Act program has also been involved. These steps were not carried out exclusively by EPA but rather by an active coalition of cooperating federal agencies and all states in the Chesapeake Bay basin,

with active public participation by representatives of wastewater treatment agencies, environmental groups, agricultural interests (mostly through state agriculture agencies) and local officials involved in urban stormwater programs.

Steps Leading to EPA's Draft TMDL

For years, as EPA describes in its draft TMDL report, monitoring and scientific studies documented the serious decline of water quality in the Bay and tidal tributaries, coupled with a decline in fisheries that has, for some species, been disastrous. The extensive Chesapeake Bay research program, funded by Congress during the 1970s, concluded that excess nutrients (nitrogen and phosphorus) were the chief causes of the Bay's decline. Monitoring and scientific studies carried out by a broad array of investigators including the National Oceanic and Atmospheric Administration, the U.S. Geological Survey, states with Chesapeake Bay and tidal tributary waters, university scientists and citizen groups such as the Chesapeake Bay Foundation have continued to confirm that controlling excess nutrients is essential to reverse the Bay's decline, and, more recently, that controlling sediment to protect the Bay's vital underwater grass habitat is also vital.

The Chesapeake Bay Agreement of 1983 established a cooperative federal-state program to restore the Bay, seeking voluntarily to unite efforts by the partners Maryland, Virginia, Pennsylvania, the District of Columbia, the Chesapeake Bay Commission and the Environmental Protection Agency. Subsequently, the Chesapeake Bay Program set a goal of reducing controllable nutrient loads by 40%, and, in the early 1990s, stressed the necessity of reducing sources of nitrogen and phosphorus in the tributary river basins through "tributary strategies" developed by the partner states. The tributary strategies are precursors of the Watershed Implementation Plans now envisioned in EPA's draft TMDL report as the mechanism for providing reasonable assurance that nutrient and sediment loads will be reduced sufficiently to meet the established tidal water quality standards for protecting aquatic life in the Bay and tidal tributaries.

Waters not meeting water quality standards are required by the Clean Water Act to be listed as "impaired" under sec. 303(d). I understand that Maryland and Delaware listed all or part of their Chesapeake Bay and tidal tributary waters as impaired for aquatic life protection in 1996. In 1998, Virginia and EPA completed the listing process for Virginia's Chesapeake Bay and tidal tributary waters. By 1998, then, the Bay and most of its tidal tributaries had been officially identified as impaired under sec. 303(d) of the federal act.

Once impaired waters are listed under 303(d), the Clean Water Act requires the creation of a TMDL for each listed segment, to establish allocations (allowable loads) for the pollutants in question. TMDLs guide the water quality restoration effort and establish a basis for better accounting of pollutant sources and their cleanup. Delay by the states and EPA in establishing TMDLs for the Bay pollutants led to lawsuits. Most importantly for the timing of the Chesapeake Bay TMDL, EPA settled the lawsuit brought by the American Canoe Association *et al.*, agreeing to establish needed TMDLs for Virginia impaired waters over a 12-year schedule. Given the

complexity of establishing the Bay TMDLs, and the preparatory steps required, the Virginia settlement allowed EPA until May 2011 to complete these TMDLs.

EPA and the states in the Bay Program undertook two parallel efforts to respond to this challenge and make the best use of the years available. They agreed to accelerate the cooperative Bay program effort to correct nutrient and sediment pollution, and to establish, basinwide, a Clean Water Act foundation for standards, load allocations and regulatory activities, using the open, collaborative mechanisms of the Chesapeake Bay Program. The partners would also seek to use pertinent Clean Air Act requirements to control air deposition of nitrogen compounds.

Thus, EPA and its Chesapeake Bay Program partners (the states of Maryland, Virginia, Pennsylvania, the District of Columbia, and the Chesapeake Bay Commission) established, in the new *Chesapeake 2000 Agreement*, a more focused and accelerated program to install nutrient and sediment controls to restore water quality through implementation of improved tributary strategies to achieve tributary-specific nutrient and sediment load allocations. It was hoped that this initiative might succeed so well that Bay tidal waters could be “de-listed”, making the Chesapeake Bay TMDL unnecessary. The deadline for restoring water quality, removing the Bay’s tidal waters from the lists of impaired waters and forestalling the TMDL, was 2010.

The states of Delaware, New York and West Virginia were actively recruited to sign *memoranda of understanding* with the Bay Program Partners in 2000-2002. These states agreed to join all aspects of the Bay water quality restoration program, and thus participated in the steps outlined below and in Chesapeake Bay Program Principals’ Staff Committee (PSC) meetings where water quality policy decisions were made by consensus of the federal-state partners. (Note that, over time, not all headwater states concurred in every decision made by the PSC.)

Water quality standards Building upon a body of Chesapeake Bay science going back to the 1980s (as described in EPA’s draft TMDL report) EPA, in cooperation with the states, scientific community and stakeholders, undertook a comprehensive program to modify the water quality standards for the Bay’s tidal waters in Maryland, Virginia, the District of Columbia and Delaware so that they would provide the most credible and effective basis for focusing the pollutant cleanup effort. The revised water quality standards would also support establishment of any necessary TMDL allocations, should the efforts at restoration fail to meet the 2010 deadline.

There were several problems with the water quality standards then on the books for Chesapeake Bay and tidal waters. In particular, the dissolved oxygen (DO) criteria in the Chesapeake Bay standards were based on freshwater science and applied all the way from the surface to the bottom of the Bay. Such an approach was not representative of estuary conditions where stratification occurs, and did not represent natural wetland conditions. There were unexplainable differences between different state standards. There were no criteria that adequately addressed water clarity for underwater grass beds, or excess algae (chlorophyll-*a*).

The first stage in this process was to develop new Chesapeake Bay-specific water quality criteria which would incorporate the best scientific understanding of estuaries, and make use of the

extensive body of research and monitoring in the Chesapeake Bay. Unlike most EPA criteria developed by EPA scientists, this criteria-development effort was carried out regionally by EPA, at its Chesapeake Bay Program Office (2000-2003). The Bay Office used a highly public process for developing the criteria, with continuous participation of all states in the basin, Bay area scientists and stakeholders. All meetings were open to the public, and there were three public comment periods.

EPA published the criteria, entitled *Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll-a for the Chesapeake Bay and Its Tidal Tributaries*, in 2003. They moved beyond the "one number applies everywhere" approach to dissolved oxygen by establishing the scientific basis for site- and species-specific DO levels which could be applied both spatially and temporarily to protect aquatic species. The highest DO requirements were recommended for spawning and nursery areas; the lowest, at the very bottom of natural and man-made trenches in the Bay and tributaries, were for seasonal refuges for bottom dwellers during the summer months. Making these refinements in the state DO standards not only enabled protection of Bay aquatic life (enhancing it in spawning and nursery areas over the older standards), it increased dramatically the technical and economic achievability of the Bay standards.

The water clarity criteria were developed to protect Bay underwater grasses (submerged aquatic vegetation or SAV). An innovation was to take advantage of the Bay Program's long-standing research on mapping and restoring underwater grass habitat. EPA and the states worked together to establish site-specific acreage goals for SAV protection. These site-specific SAV goals were subsequently incorporated in the tidal states' water quality standards, allowing attainment to be measured either by acreage or by compliance with the clarity criteria. This approach, again, enhanced both the scientific basis and the technical and economic achievability of the standards.

Narrative and numerical approaches for controlling excess algae through chlorophyll-*a* criteria were developed. As the Bay Program partners agreed that most algal problems could be solved by attaining the DO criteria, the policy was that numerical criteria would only be necessary in state standards for areas where achievement of the DO criteria would not eliminate algal water quality impairments. This was another decision, prompted in part by stakeholder involvement in the criteria-development process, which probably decreased the cost of applying the standards.

Accompanying the 2003 Chesapeake Bay criteria guidance was methodological guidance for all tidal water states to use in determining when and where the standards are being met. To assure interstate consistency, the methods were officially adopted by the states when they revised their state standards. EPA was able to use the scientific research and data in the Bay and tidal tributaries to apply methods to most areas which are much more refined than EPA's traditional default approach for distinguishing exceedances of water quality criteria from violations. Even though using the new methods requires a lot of data, this is another refinement which has the potential to make the standards more feasible to achieve.

Applying the new EPA criteria and “habitat zoning” entailed revising aquatic use designations, some of which were less restrictive than the old water quality standards. Thus, states had to comply with provisions of the federal water quality standards regulations (40 CFR Part 131.10) governing changes in water uses when they proposed their revised Chesapeake Bay tidal water standards. While the EPA Chesapeake Bay Program Office was developing the new water quality criteria, it prepared technical and economic analyses which the states could use to make their aquatic use designations and satisfy the federal regulations. Again, state partners and stakeholders were involved in all of this work, providing guidance on the approaches to be used and reviewing the results. EPA published the results in 2003, in its *Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability*.

First, EPA presented an analysis in the *Technical Support Document* to justify the spatial and temporal changes proposed in the aquatic use zones for applying the new dissolved oxygen criteria. It demonstrated that the older standards were unattainable both because of natural characteristics (such as stratification) and manmade alterations (such as navigation channels, location of cities and associated infrastructure) which could not be remedied. Technical attainability analyses were conducted based on hypothetical tiers of nutrient/sediment control from wastewater technology, agricultural best management practices and other actions. Although hypothetical, these tiers were developed by expert workgroups in the Bay Program who knew the technologies which were being or could be employed to control nutrient loads, and their estimated costs. (Sediment load estimations were based on associated nutrient controls.) All partners agreed that the E3 scenario - everyone doing everything everywhere - was beyond what could be achieved, and yet, even at this level, there were zones in the Bay and tidal tributaries where the older standards could not be met. These general findings about use attainability (along with site-specific information) assisted the states to satisfy the decision criteria in the EPA regulations when they proposed their revised water quality standards.

The Bay partners decided to go further in examining use attainability, using the same kind of technical analysis, based on modeling the DO criteria response to hypothetical tiers of control actions, to determine whether the revised water quality criteria and use designations could be achieved. In addition, “screening-level” economic analyses sought to rule out areas where achieving the water quality standards might cause “substantial and widespread economic and social impacts” (40 CFR 131.10(g)(6)). The results of the technical analyses were presented in the *Technical Support Document*, and the Bay partners concluded that the revised water quality standards would, in principle, be technically and economically attainable. This was a general finding subject to further analysis of particular areas by the states in their water quality standards adoption processes. The economic analyses were published in EPA’s report, *Economic Analyses Associated with the Identification of Chesapeake Bay Designated Uses and Attainability* (2003).

The states completed the process of adopting their revised Chesapeake Bay tidal water quality standards in 2004-2005. All of the revisions were approved by EPA. Since publication of the criteria document in 2003, EPA, with its state partners, has continued to refine the criteria and methods. These refinements build upon the scientific research and reasoning of the 2003 criteria, habitat zoning and methods for determining whether the standards are being met. EPA has

published several amendments to the criteria and supporting documents. Conforming modifications of the state standards have been completed or are pending, as described in EPA's draft TMDL report.

I have stressed how technical and economic attainability were addressed during the standards-development process because some parties commenting on the Chesapeake Bay TMDL have raised economic issues. EPA and the states conducted multiple analyses to make the Chesapeake Bay tidal water quality standards both scientifically valid and protective of aquatic uses, and at the same time, attainable using technologies and best management practices without unreasonable financial costs.

To improve the reliability of water quality monitoring, EPA and all basin states, two river basin commissions and the U.S. Geological Survey, agreed to a common monitoring strategy and expanded network in 2004.

2003 nutrient and sediment load allocations As the EPA water quality criteria were being completed, it became urgent to focus and accelerate the cleanup efforts through new or revised state tributary strategies. To do this, tributary-specific nutrient and sediment load allocations were essential. EPA employed its Chesapeake Bay models and an allocations work group to develop allocations for all river basins in the Chesapeake Bay watershed. As in developing the water quality criteria, there was active participation by all Bay watershed states and stakeholder representation throughout this process. Final negotiations to establish the nutrient and sediment load allocations were led by former Virginia Natural Resources Secretary Tayloe Murphy, then PSC chair.

After consensus was reached by the PSC, representing Chesapeake Bay Program policy makers, and including participation by the headwater states, the allocations were issued in April 2003. Even then, the 2003 load allocations were described as "TMDL-like" and the nutrient allocations are remarkably similar to EPA's 2010 proposed TMDL nutrient allocations. Thus, for seven years, states and stakeholders have known about the nutrient and sediment limitations necessary to restore Bay water quality. Furthermore, to assure understanding of the allocations development process, EPA published an explanatory report, *Setting and Allocating the Chesapeake Basin Nutrient and Sediment Loads. The Collaborative Process, Technical Tools and Innovative Approaches*.

Using the specific allocations for the river basins which contribute nutrient and sediment loads to the Bay, States developed or revised their tributary strategies. These strategies divided responsibility for controlling nutrients and sediment among source categories (such as wastewater treatment and agriculture), and described the specific types of practices which were needed. During preparation of the tributary strategies, states convened stakeholder groups. There was extensive communication with source sectors both to understand the allocations and to discuss and seek input on the efforts that would be required to meet them. Tributary strategy documentation has thus been available to stakeholders for at least five years.

In 2004, EPA and the states agreed on an interstate Clean Water Act permitting strategy, implementing load reductions for this sector included in the tributary strategies. An innovative aspect of the strategy was to use Chesapeake Bay science to justify annual nutrient limits (rather than daily or monthly limits), a significant cost-saving for wastewater treatment plants. This strategy informed use of pollution control loans in the CWA State Revolving Loan Fund, and two states - Maryland and Virginia, - provided significant grant assistance.

EPA and the states began working more closely with the US Department of Agriculture to target conservation funding to farmers in the Chesapeake Bay watershed, which has resulted in the availability of increased funding as well as improvements in agricultural research in the watershed.

The Chesapeake Bay Program undertook a program to update and improve the Chesapeake Bay models, which led to the Phase 5 Watershed Model used to develop the 2010 draft TMDL.

Following adoption of the revised water quality standards, all of the states with Chesapeake Bay and tributary tidal waters updated their lists of impaired waters under sec. 303(d) according to the revised water quality standards. The Chesapeake Bay TMDL thus responds to these revised lists (2008), as explained in EPA's draft TMDL report.

Why the Chesapeake Bay TMDL is essential Despite the efforts over the past five years to implement the tributary strategies and the new permitting strategy, the Chesapeake Bay cleanup program remains seriously behind schedule and Bay tidal water quality seriously degraded. The law and the settlement agreements compel EPA to act.

It is essential that a more accountable structure be created to drive essential nutrient and sediment reductions. Establishing TMDLs through the Clean Water Act will be more authoritative than the former 2003 Chesapeake Bay allocations, and will set the stage for addressing a common concern, that most localities (rural, urban and suburban) do not yet understand what their responsibilities for nutrient and sediment control are. Despite the long-standing tributary strategies and the initial effort by the states to draft Watershed Implementation Plans, this is still being said. Despite years of public communication, and stakeholder involvement in the Chesapeake Bay Program criteria-development, allocations and tributary strategy processes, finger-pointing persists among areas and sectors.

Once the TMDL loads have been allocated officially to states and tributary rivers, the states finally will be able to subdivide the loads to the responsible local jurisdictions (principally counties) and place accountability for local actions where it belongs. This will facilitate assessment of local economic issues, help identify the most efficient approaches, and finally mobilize all those who must act to restore the Chesapeake Bay estuarine waters and their natural resource abundance.

This TMDL process is designed to result in a clear and transparent allocation of nutrient and sediment loads within each state, and among sources and categories of sources, so as responsibly

and cost-effectively to apportion responsibility for achieving compliance with water quality standards over a reasonable period of time. The continuing planning process which is built into the Clean Water Act (sec. 303), coupled with EPA's commitment in the TMDL to adaptive management, will allow the states and EPA appropriate flexibility to make mid-course corrections along the way – both to assure reasonable progress and to avoid unfair economic burdens on any particular sector or source.

Rebecca W. Hanmer

/s/ Rebecca W. Hanmer

* Ms. Hanmer was a veteran program manager in EPA, having joined the Agency in 1970. Her career included experience with developing and implementing water quality standards at several levels – starting in 1967 when she was assigned to the federal government's first water quality standards staff, created to develop policy and technical guidelines, and review state water quality standards under the 1965 amendments to the Federal Water Pollution Control Act (in the Federal Water Pollution Control Administration, U.S. Department of the Interior). During the 1970s, she was a senior EPA regional official (Deputy Regional Administrator from 1977-79, and Regional Administrator in 1979-1980) where she administered Clean Water Act regional programs, among others. During the 1980s, she served twice as Deputy Assistant Administrator for Water and twice acted as Assistant Administrator for Water. She also headed EPA's Office of Water Enforcement and Permits for two years, from 1984-1986. In all these positions, she resolved difficult water quality standards issues. Ms. Hanmer oversaw revision of EPA's national water quality standards regulations, and development of the Agency's program for "water quality based" permitting (that is, policy and methods for translating water quality standards into water discharge permit requirements, including modeling and analytical issues). After a period in the 1990s as a program manager in the Organisation for Economic Cooperation and Development, Ms. Hanmer came back to EPA in 1997 to help solve serious environmental issues in the District of Columbia, principally water quality. In 2000, after acting as Regional Administrator in EPA's Region VIII, Ms. Hanmer joined EPA Region III as Water Protection Division Director and subsequently served from 2002-2007 as Chesapeake Bay Program Office Director.